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PM 25
1471-79

ACCEPTED
DEC - 2 1987
Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under
EPA Reg. No. 1471-79

ELANCO ID 5030

Paarlan®
Herbicide
E.C.

Net Contents 1 Quart

A selective herbicide for the
preemergence control of annual
grasses and broadleaf weeds

Active Ingredient:
isopropalin* (2,6-dinitro-N, N-dipropylcumidine) 88.0%
Inert Ingredients 11.4%
Contains 1 1/2 pounds active ingredient per quart
*Paarlan®—the registered trademark for Elanco Products isopropalin

Keep Out of Reach of Children.
CAUTION
See back of can for additional precautionary statements.
EPA Reg. No. 1471-79
EPA Est. 1471-IN-2

FN 0528

179****/EG**72/LABELS/US/F0528/15

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Directions for Use:

Read All Directions Carefully
Before Applying

See literature on top of can for complete directions for use.
It is a violation of Federal Law to use this product in a manner
inconsistent with its labeling.

Precautionary Statements

**Hazards to Humans and Domestic Animals
CAUTION**

Harmful if swallowed or absorbed through the skin. Avoid contact with
skin, eyes or clothing. In case of contact, flush with water. Do not
contaminate foodstuffs or feeds.

First Aid—If swallowed: Call a physician or Poison Control Center.
Drink 1 or 2 glasses of water and induce vomiting by touching back of
throat with finger. Do not induce vomiting or give anything by mouth to
an unconscious person. If on skin: Wash with plenty of soap and
water. If in eyes: Flush with plenty of water. Get medical attention.

Environmental Hazards

Direct contamination of any body of water with this emulsifiable
concentrate may kill fish. Do not contaminate any body of water by
direct application, cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL

Storage: Do not store near heat or open flame. Store in
original container only. In case of leak or spill, use absorbent
materials to contain liquids and dispose as waste.

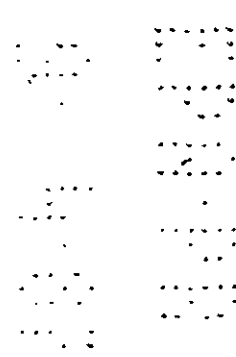
Pesticide Disposal: Do not contaminate water, food or feed by
storage or disposal. Pesticide wastes are toxic. Improper
disposal of excess pesticide, spray mixture, or rinsate is a
violation of Federal Law. If these wastes cannot be disposed of
by use according to label instructions, contact your State
Pesticide or Environmental Control Agency, or the Hazardous
Waste representative at the nearest EPA Regional Office for
guidance.

Container Disposal: Triple rinse (or equivalent). Then offer for
recycling or reconditioning, or puncture and dispose of in a
sanitary landfill, or by other procedures approved by state and
local authorities.

The manufacturer makes no warranties, express or implied, concerning the
product or its use which extend beyond the description on the label. All statements
made concerning this product apply only when used as directed.

Elanco Products Company • A Division of Eli Lilly and Company
Indianapolis, IN 46205, U.S.A.

TC 3034 AMB



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PI 1612 AMP

ID 5030



Paarlan® E.C. Herbicide for Tobacco

Directions for Use

Paarlan is a preemergence herbicide which is not incorporated to provide season long control of many annual grasses and broadleaf weeds. Incorporation of Paarlan helps assure effective weed control. Paarlan controls weeds as they germinate.

Soil Texture Guide

The amount of Paarlan to be applied will vary with the soil texture. A fine textured soil generally requires more Paarlan than a coarse textured soil. Paarlan is not recommended for use on muck or other soils containing more than 10% organic matter. Refer to the following table to determine soil texture grouping.

Soil Texture	Soil Classification	Soil Texture	Soil Classification
Coarse	Sand	Fine	Clay
	Sandy sand		Clay loam
	Sandy loam		Silty clay loam*
Medium	Loam	Silty clay	Sandy clay
	Silty clay loam*		Sandy clay loam*
	Silt loam		
	Silt		
	Sandy clay loam*		

*Silty clay loam and sandy clay loam soils are transitional soils and may be classified as either medium or fine textured soils. If silty clay loam or sandy clay loams are predominantly sand or silt, they are usually classified as medium textured soils. If predominantly clay, they are usually classified as fine textured soils.

Soil Preparation

Destroy existing weeds before a Paarlan application. Chop and thoroughly mix crop residues into the soil to a depth of 4 to 8 inches by deep blowing or discing before a Paarlan application. Use machinery that breaks up large clods before a Paarlan application.

General Mixing Directions

Use the following instructions for mixing Paarlan E.C. alone in water and tank mixed in water.

General Mixing Instructions in Water Alone:
Start with a clean sprayer. Fill the spray tank 1/2 to 3/4 full with clean water. Start agitation. Add the correct quantity of Paarlan E.C., continue agitation, and finish filling the tank.

General Tank Mix Instructions:
Vigorous, continuous agitation is required for all tank mixes. (Longer pipe agitators generally provide the best agitation in spray tanks). During filling, to prevent foaming, avoid stirring or splashing air into the mixture by placing the end of the fill pipe below the surface of the water in the spray tank. Do not allow the mixture to siphon back into the water source.

Mixing order: Fill the tank 1/2 to 3/4 full with clean water. Start the agitation. Add dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (F), and liquids (L) to the water and agitate until the products are completely dispersed in the water. Allow additional mixing and dispersion time when using dry flowable products. Continue agitation and fill tank to 3/4 full. Add the Paarlan E.C., mix thoroughly, then add any solution (S) products, agitate and finish filling. Maintain agitation during filling through application. If spraying and agitation must be stopped before the tank is empty, the materials may settle to the bottom. In this case, it is important to resuspend all of the material in the bottom of the tank before continuing the spray application. Sometimes it is more difficult to resuspend settled material than it is to suspend them originally. A sparger agitator is particularly useful for this purpose.

Read and carefully follow all label instructions for each material added to the tank. Pre-mixing dry and flowable formulations with water (stirring) and pouring the slurry through a 20 or 35 mesh wetting screen in the top of the tank will help assure good initial dispersion in the tank water. Line screens in the tank should be no finer than 50 or 100 mesh (finer than 50 mesh). If a buildup of material is seen on the walls of the spray tank, wash the tank with soapy water between tanks. Rinse and continue the spraying operation. Clean tank, lines, and screens thoroughly after use.

Application Directions

Add the recommended amount of Paarlan to clean water in the spray tank during the filling operation. (See General Mixing Instructions). Apply 10 to 40 gallons of spray volume per acre (depending on the equipment used). Use any properly calibrated low pressure herbicide sprayer that will apply the spray uniformly. As the amount of spray volume decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to insure proper calibration and uniform application. Apply Paarlan to the soil surface and incorporate within the recommended time. Paarlan should not be applied to soils which are wet or are subject to prolonged periods of flooding as poor weed control may result. Do not apply Paarlan E.C. through any type of irrigation system.

Incorporation Directions

Before planting, Paarlan must be incorporated one time within 8 hours after application. A second incorporation is required with most equipment (see Incorporation Equipment, below, for specific instructions) if Paarlan is applied to a well, firm soil surface or if the wind velocity is 10 mph or higher. Immediate weed control may result from delaying the first incorporation beyond 8 hours. Incorporation should place the Paarlan into the top 2 to 3 inches of the soil (depending on the equipment used). Generally, incorporation equipment will mix Paarlan approximately half as deep as the equipment is run. For example, a disc running 4 inches deep will incorporate Paarlan into approximately the top 2 inches.

Bedded Culture

For effective weed control, Paarlan should be incorporated into the top 2 to 3 inches of the soil (depending on the equipment used) as planting begins before application of Paarlan and incorporation of bedded ground. Avoid removal of treated soil from the seedbed before or during the planting operation.

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Incorporation Equipment

Use machinery that mixes Paalen thoroughly with the soil. Shallow incorporation with implements set to mix Paalen less than 2 inches deep in the level seeded may result in erratic weed control. Use of incorporation equipment not listed below may result in poor or erratic weed control and/or crop injury.

Recommended equipment includes:
Disc set to cut 4 to 6 inches deep and spaced in 2 different directions at 4 to 6 mph. A tandem or double disc spaced one level does not provide adequate incorporation.
Power take off driven equipment (tillers, cultivators, hoes) set to incorporate Paalen in the top 2 to 3 inches of the level seeded. P.T.O. driven equipment should be operated only at a speed not greater than 4 mph.

Cultivation After Planting

Soil treated with Paalen may be shallowly cultivated or rotary hoed without reducing the weed control activity of Paalen. Do not cultivate deeper than the Paalen treated layer of soil. This may bring untreated soil to the surface and poor weed control may result. In areas of bedded culture, weeds may germinate in the bottom of the furrow due to the removal of Paalen treated soil. These weeds should be controlled by cultivation. Shallow cultivation, rotary hoeing and hand hoeing do not reduce the weed control activity of Paalen.

Weeds and Grasses Controlled

Paalen will not control established weeds.

Grasses Controlled

Barnyardgrass	Echinochloa sp.
Crabgrass	Digitaria sp.
(Large crabgrass)	
(Small crabgrass)	
(Smooth crabgrass)	
Crowfootgrass	Dactyloctenium aegyptium
Forbes	Sesuvia spp.
(Green forbes)	
(Yellow forbes)	
(Barngrass)	
(Rough white)	
(Green, round green)	
Goosegrass	Echinochloa
(Silver crabgrass)	
(Silvergrass)	
(Wheatgrass)	
(Yellowgrass)	
Johnsongrass	Sorghum halepense
(Seedling only)	
Ryegrass, annual	Lolium multiflorum
(Italian ryegrass)	
(Ryegrass)	
Field bindweed	Convolvulus incultus
Fall panicum	Panicum dichotomiflorum
Texas panicum	Panicum texense
(Buffalograss)	
(Colorado grass)	

Broadleaf Weeds Controlled

Carpenterweed	Morugo verticillata
Florida pusley	Richardia scabra
(Florida purslane)	
(Mexican clover)	
(Pursley)	
Common lambquarters	Chenopodium album
Common purslane	Portulaca oleraceae
Pigweed	
(Rough pigweed)	
(Smooth pigweed)	
(Rough pigweed)	
Spiny amaranth	

These recommendations are given as broadleaf rates for Paalen. For band application, use proportionately less. Apply Paalen up to 5 weeks before planting or transplanting. A waiting period is necessary. Planting or transplanting may be done the same day as a Paalen application.

Transplant Tobacco

Air-cured (Burrley, Maryland, Dark):
Paalen A-label. Apply and incorporate Paalen before transplanting at a broadcast rate per acre of 2 pints on all soil textures. Do not apply Paalen after transplanting.
Paalen Tank Mix with insecticides/nematocides: Paalen at 2 pints per acre can be tank mixed with Desamit, D-System, Furadan, Mo-Cap, and Mo-Cap Plus for effective weed, insect and/or nematode control.

Flue-cured:
Paalen A-label. Apply and incorporate Paalen before transplanting at a broadcast rate per acre of 2 pints on coarse and medium soils and 2 1/2 pints on fine soils.
Paalen Tank Mix with insecticides/nematocides: Paalen at 2 pints per acre can be tank mixed with Desamit + D-System, Mo-Cap, Mo-Cap Plus, D-System, D-System, Desamit, and Furadan for effective weed, insect and/or nematode control.

Paalen is usually compatible with Retomil. To assure the compatibility of Paalen with Retomil, pour the products into a small container of water in the correct proportion. After thorough mixing, let stand for five minutes. If the combination remains mixed or can be remixed readily, the mixture is compatible.

Precaution

Read all product labels carefully before using. Note all directions, cautions, precautions, and special precautions.
Note: Application time before transplanting varies with different products. Read all labels carefully for this information.

Application with Dry Fertilizers

Paalen may be impregnated on those dry fertilizers. Individual state regulations regarding dry fertilizer mixing, registration, labeling and applications are the responsibility of the individual and/or company selling the fertilizer and Paalen mixture. Use any coated drum, belt, ribbon or other commonly used dry bulk fertilizer blender. The nozzle or nozzle used to spray the Paalen on to the fertilizer should be placed to provide uniform spray coverage. If less than 6 parts of Paalen are mixed per ton of fertilizer, add water to the Paalen to give a total volume of at least 6 parts per ton. See the following table for amounts of Paalen and water to be premixed based on the amount of fertilizer to be applied per acre.

Fertilizer Rate (Pounds/Acre)	1000	1200	1400	1600	1800	2000
Paalen Rate (Pints/Acre)	2	2	2	2	2	2
Pints of Water to be Premixed with Paalen	1	1 1/4	2 1/4	2 3/4	3 1/4	4
Total Volume Paalen + Water (Pints)	3	3 1/4	4 1/4	4 3/4	5 1/4	6

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Paarian Impregnation Volume - For Paarian at 2 1/2 Pints/Acre

Fertilizer Rate (Pounds/Acre)	1000	1200	1400	1600	1800	2000
Paarian Rate (Pints/Acre)	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Pints of Water to be Impregnated with Paarian	1/2	1	1 1/2	2	2 1/2	3 1/2
Total Volume Paarian + Water (Pints)	3	3 1/2	4 1/2	4 1/2	5 1/2	6

Check the crop section to determine the rate of Paarian per acre. If it is less than above does not exceed the amount of fertilizer per acre. Use the following calculation to determine the amount of Paarian to be impregnated per ton of dry fertilizer:

$$\frac{\text{Pints of Paarian Per Acre}}{\text{Pints of Fertilizer Per Ton}} \times 2000 = \text{Lbs. Fertilizer Per Acre}$$

Application
 Spread the fertilizer/Paarian mixture with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

Incorporation
 Follow normal Paarian incorporation procedures.

Application with Liquid Fertilizers

Paarian may be mixed with most liquid fertilizer materials. Individual state regulations relating to liquid fertilizer mixing, registration, labeling and applications are the responsibility of the individual and/or company selling the fertilizer and Paarian mixture.

Liquid Fertilizer Mixing Instructions

Paarian E.C. is Liquid Fertilizer Emulsifiable concentrates, such as Paarian E.C. can be mixed with most liquid fertilizers. In all cases, continuous agitation is required to prevent the Paarian from rising to the surface as an oily layer. When necessary (see Liquid Fertilizer Compatibility Test below), a compatibility agent can be used to cause the Paarian E.C. to emulsify properly (i.e., have a milky appearance rather than oily layer). The use of compatibility agents is especially important when tank mixing emulsifiable concentrates (EC) with dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (F), liquids (L) or solutions (S) in liquid fertilizers. If the emulsion is not properly formed, and the E.C. rises to the surface of the fertilizer as an oil slick, it may combine with the wettable powder, flowable or suspension to form oily curds (viscous phases) which are difficult to redispense. Any one of the compatibility agents listed below is useful in causing emulsifiable concentrates to form non-oiling mixtures with liquid fertilizers. These compatibility agents can be used in rates as low as 1/2 to 2 pints per ton of liquid fertilizer and should be mixed first with the fertilizer before adding the emulsifiable concentrate. Read the label on the compatibility agent and follow the directions.

1. Sponto 1580 (Mico Chemicals Co., Chicago, IL)
2. Concoat (Farm Chemicals, Inc., Aberdeen, MD)
3. Urea Pressure Ag Chemical, Madison, WI
4. T-Mull 734-2 (Thompson-Hayward Chemical Co.)
5. Rigo Compatibility Agent (Rigo Company, Buciner, KY)
6. Amoco Spray Mate (Amoco Oil Co., Chicago, IL)
7. Chem-Lite (Universal Corp., New Orleans, LA)

Each of the above is a phosphoric ester type surfactant designed to be used with liquid fertilizers. They usually do not work well as compatibility agents in tank mixtures in plain water.

Testing for Tank Mix Compatibility in Liquid Fertilizers

Emulsifiable concentrates alone or in tank mixture with dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (F), liquids (L) or solutions (S) may not combine properly with some liquid fertilizer materials. Small quantities should always be tested before full scale mixing. This will determine whether a compatibility agent is needed, and which agent does the best job. The seven agents listed above have been thoroughly tested. There are many other surfactants on the market which were not designed for use with liquid fertilizers. Use the following test to select the correct agent for your mixture.

1. Put 1 pint of the liquid fertilizer in a quart jar.
2. Add 1 to 4 teaspoonfuls of the dry flowable, WP, AS, F, or L formulation (depending on the recommended rate per acre) to the liquid fertilizer. Close jar and agitate until dispersed evenly in the fertilizer. If the materials do not disperse well, it may be necessary to stir the chemicals in water before adding to the fertilizer.
3. In order to test the materials (Step 2), add 3 to 4 teaspoonfuls of the Paarian to the jar. If the mixture will ADD without disturbing the mixture test and agitate. Observe the jar for about 10 minutes. If the material rises to the surface and forms a thick layer (oily curds) which will not redispense when agitated, a compatibility agent is needed. If the mixture is easily redispersed to its original state with slight agitation, no agent is needed but good agitation must be provided in the field or spray tank.
4. If the need for a compatibility agent is shown in Step 3, plug a clean quart jar, start at Step 1 above, add 1/2 teaspoonful of the compatibility agent to the liquid fertilizer, mix well, then repeat Steps 2 and 3.

An effective compatibility agent will cause the mixture to remain uniformly mixed with little or no separating or oil rising to the surface for one full hour or longer. If slight separation does occur, 2 to 3 inversions of the jar should give a uniform remix. If oily curds form, which will not redispense, more agent or another agent should be tried. Use a clean jar for each test. The complete mixture will have a uniform appearance and will be relatively easy to keep mixed with gentle agitation of the jar.

Application
 Spread the Paarian/fertilizer with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

Incorporation
 Follow recommended incorporation procedures for Paarian.

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION
 Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing. In case of contact, flush with water. Do not consume foodstuffs or liquids. First Aid—If swallowed, call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. If on skin, wash with plenty of soap and water. If in eyes, flush with plenty of water. Get medical attention.

Environmental Hazards

Direct contamination of any body of water with the emulsifiable concentrate may kill fish. Do not contaminate any body of water by direct application, cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL

Storage Do not store near heat or open flame. Store in original container only. In case of leak or spill, use absorbent material to contain liquids and dispose as waste.
Pesticide Disposal Do not contaminate water, food or feed by storage or disposal. Pesticides waste are toxic. Improper disposal of excess pesticide spray mixtures, or residue is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representatives at the nearest EPA Regional Office for guidance.
Container Disposal Triple rinse (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

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General Use Precautions

Applied according to directions and under normal growing conditions, Paaten will not harm the treated crop. Over application, uneven application or improper soil incorporation of Paaten can result in erratic weed control, crop injury, delayed emergence or soil residue. Seeding disease, cold weather, deep planting, excessive moisture, high salt concentration or drought may weaken crop seedlings or transplants and increase the possibility of damage from Paaten. Under these conditions, delayed crop development or reduced yields may result.

**Paaten E.C. Performance Guarantee
A Limited Warranty of Paaten
Weed and Grass Control**

Elanco Products Company warrants that Paaten E.C. will control the weeds and grasses as indicated on its current label when used according to label directions and subject to the following limitations:

1. Purchaser must notify Elanco promptly if a lack of commercially acceptable control occurs. Such notice must be given within forty (40) days after the last planting or application of Paaten E.C. to the treated crop, whichever occurs first.
2. An Elanco representative must be satisfied that Purchaser used Paaten E.C. according to the label directions.
3. The Purchaser must provide an Elanco representative with an invoice or other satisfactory record which shows the price and quantity of Paaten E.C. purchased.
4. Elanco's liability will be limited to a refund of the purchase price of the Paaten E.C. applied to the acreage on which weed control was not satisfactory.
5. Void outside the U.S.A.

Disclaimer of Warranties

The warranty printed above is the only warranty applicable to this product. All other warranties, express or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose are disclaimed. This disclaimer of warranties does not apply where prohibited by operation of law.

Limitation of Damages

Elanco's liability, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the amount of the purchase price of the Paaten E.C. and under no circumstances shall Elanco be liable for special, indirect or consequential damages. This limitation of damages does not apply where prohibited by operation of law.

Inherent Risks of Use

Failure to carefully follow the directions for use of Paaten E.C. may result in unsatisfactory weed control or crop injury. Factors such as plant disease, deep planting, cold weather, excessive moisture, high salt concentration, improper seed/placement, drought, or transplant quality may also result in unsatisfactory weed control or crop injury.

- Paaten® (propazine, Elanco)
- Dastan® (metazolin, Bayer GmbH)
- Daznom® (dazomet, Ciba-Geigy)
- Di-Sectone® (diquat, Bayer (Smith))
- Furadant® (carbutin, F&C)
- M-3-Capt® (ethoprop, Mobac)
- Rudomet® (metazolin, Ciba-Geigy)

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Paarlan® E.C.
Herbicide for Tobacco

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Directions for Use

Paarlan is a preemergence herbicide which is soil incorporated to provide season long control of many species of grasses and broadleaf weeds. Incorporation of Paarlan helps assure effective weed control. Paarlan controls weeds as they germinate.

Soil Texture Guide

The amount of Paarlan to be applied will vary with the soil texture. A fine textured soil generally requires more Paarlan than a coarse textured soil. Paarlan is not recommended for use on much or other soils containing more than 1% organic matter. Refer to the following table to determine soil texture grouping.

Soil Texture	Soil Classification	Soil Texture	Soil Classification
Coarse	Sand	Fine	Clay
	Loamy sand		Clay loam
	Sandy loam		Silty clay loam*
Medium	Loam	Medium	Silty clay
	Silty clay loam*		Sandy clay
	Silt loam		Sandy clay loam*
	Silt		
	Sandy clay loam*		

*Silty clay loam and sandy clay loam soils are transitional soils and may be classified as either medium or fine textured soils. If silty clay loam or sandy clay loam are predominantly sand or silt, they are usually classified as medium textured soils, if predominantly clay, they are usually classified as fine textured soils.

Soil Preparation

Destroy existing weeds before a Paarlan application. Chop and thoroughly mix crop residues into the soil to a depth of 4 to 8 inches by deep plowing or tilling before a Paarlan application. Use machinery that breaks up large clots before a Paarlan application.

General Mixing Directions

Use the following instructions for mixing Paarlan E.C. sprays in water and tank mixed in water.

General Mixing Instructions in Water Alone:

Start with a clean sprayer. Fill the spray tank 1/2 to 3/4 full with clean water. Start agitation. Add the correct quantity of Paarlan E.C., continue agitation, and finish filling the tank.

General Tank Mix Instructions:

Vigorous, continuous agitation is required for all tank mixes. (Searger pipe agitators generally provide the best agitation in spray tanks). During filling, to prevent foaming, avoid stirring or splashing air into the mixture by placing the end of the fill pipe below the surface of the water in the spray tank. Do not allow the mixture to siphon back into the water source.

Mixing order: Fill the tank 1/2 to 3/4 full with clean water. Start the agitation. Add dry flowable granules (FR), aqueous suspensions (AS), flowables (F), and liquids (L) to the water and agitate until the products are completely dispersed in the water. Add additional mixing and dispersion time when using dry flowable products. Continue agitation and fill tank to 3/4 full. Add the Paarlan E.C. mix thoroughly, then add any solution (S) products, agitate and finish filling. Maintain agitation during filling through application. If spraying and agitation must be stopped before the tank is empty, the materials may settle to the bottom. In this case, it is important to resuspend all of the material in the bottom of the tank before continuing the spray application. Sometimes it is more difficult to resuspend settled material than it is to suspend them originally. A searger agitator is particularly useful for this purpose.

Read and carefully follow all label instructions for each material added to the tank. Pre-mixing dry and liquid formulations with water (stirring) and pouring the slurry through a 20 or 30 mesh screening screen in the top of the tank will insure good uniform dispersion in the tank water. Line screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

If a buildup of material is seen on the walls of the spray tank, wash the tank with soapy water between tanks. Rinse and continue the spraying operation. Clean tank, lines, and screens thoroughly after use.

Application Directions

Add the recommended amount of Paarlan to clean water in the spray tank during the filling operation. (See General Mixing Instructions). Apply in 20 to 40 gallons of spray volume per acre (broadcast basis). Use any properly calibrated low pressure herbicide sprayer that will apply the spray uniformly. As the amount of spray volume decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to insure proper calibration and uniform application. Apply Paarlan to the soil surface and incorporate within the recommended time. Paarlan should not be applied to soils which are wet or are subject to prolonged periods of flooding as poor weed control may result. Do not apply Paarlan E.C. through any type of irrigation system.

Incorporation Directions

Before planting, Paarlan must be incorporated into the soil within 8 hours after application. A second incorporation is required with most equipment (see Incorporation Equipment below, for specific instructions). If Paarlan is applied to a wet, firm soil surface or if the wind velocity is 10 mph or higher, transverse weed control may result from delaying the first incorporation beyond 8 hours. Incorporation should place the Paarlan into the top 2 to 3 inches of the final seedbed. Generally, incorporation equipment will mix Paarlan approximately half as deep as the equipment is run. For example, if the equipment is running 4 inches deep will incorporate Paarlan into approximately the top 2 inches.

Bedded Culture

For effective weed control, Paarlan should be incorporated into the top 2 to 3 inches of the final seedbed. Knock off beds to planting height before application of Paarlan and incorporation of bedded ground. Avoid removal of treated soil from the seedbed before or during the planting operation.

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Incorporation Equipment

Use machinery that mixes Paartan thoroughly with the soil. Shallow incorporation with implements set to mix Paartan to a depth of 2 inches deep in the final seedbed or transplanting bed is recommended. Use of incorporation equipment not listed below may result in poor or erratic weed control and/or crop injury.

Recommended equipment includes:

Disc set to cut 4 to 6 inches deep and operated in 2 different directions at 4 to 6 mph. A tandem or double disc operated one time does not provide adequate incorporation. Power tillage driven equipment (rollers, cultivators, hoes) set to incorporate Paartan in the top 2 to 3 inches of the final seedbed. If 10" driven equipment should be operated one time at a speed not greater than 4 mph.

Cultivation After Planting

Soil treated with Paartan may be shallowly cultivated or rotary hoed without reducing the weed control activity of Paartan. Do not cultivate deeper than the Paartan treated layer of soil. This may bring untreated soil to the surface and poor weed control may result. In areas of bedded culture, weeds may germinate in the bottom of the furrow due to the remainder of Paartan treated soil. These weeds should be controlled by cultivation. Shallow cultivation, rotary hoeing and hand hoeing do not reduce the weed control activity of Paartan.

Weeds and Grasses Controlled

Paartan will not control established weeds.

Grasses Controlled	
Barnyardgrass (Panicum)	Echinochloa sp.
Crabgrass (Large crabgrass) (Small crabgrass) (Smooth crabgrass)	Digitaria spp.
Crowfootgrass (Crest foxtail) (Green foxtail) (Yellow foxtail) (Bromegrass) (Rough stem) (Crest robust green)	Dactyloctenium aegyptium Sesuvium spp.
Goosegrass (Sheep crabgrass) (Sawgrass) (Winggrass) (Yarrowgrass)	Echinochloa indica
Johnsongrass (seedling only)	Sorghum halepense
Ryegrass, annual (and in ryegrass) (Ryegrass)	Lolium multiflorum
Field bindweed Fall panicum Texas panicum (Bulbgrass) (Colorado grass)	Cenchrus incertus Panicum dichotomiflorum Panicum lanatum

Broadleaf Weeds Controlled	
Carpenterweed	Alopecurus verticillatus
Florida buttercup (Florida purslane) (Mexican clover) (Pursley)	Rhynchospora scabra
Common hempweeds Common purslane Pigweed (Redroot pigweed) (Carnegie weed) (Horse purslane) (Prostrate pigweed) (Spiny amaranth)	Chenopodium album Portulaca oleraceae
Portulaca	Diochloa tenuis

These recommendations are given as broadleaf weeds for Paartan. For best application, use proportionately less. Apply Paartan up to 5 weeks before planting or transplanting. No waiting period is necessary. Planting or transplanting may be done the same day as a Paartan application.

Transplant Tobacco

Air-cured (Burrley, Maryland, Dark)
Paartan A-label: Apply and incorporate Paartan before transplanting at a broadcast rate per acre of 2 pints on all soil textures. Do not apply Paartan after transplanting.
Paartan T-label: Mix with insecticide/nematocides: Paartan at 2 pints or 1 lb can be tank mixed with Dasanex, Dazomet, Furadan, Mo-Cap, Mo-Cap Plus, and Mo-Cap Plus for effective weed, insect and/or nematode control.

Fire-cured
Paartan A-label: Apply and incorporate Paartan before transplanting at a broadcast rate per acre of 2 pints on coarse and medium soils and 2 1/2 pints on fine soils.
Paartan T-label: Mix with insecticide/nematocides: Paartan at 2 pints per acre can be tank mixed with Dasanex + Di-Syston, Mo-Cap, Mo-Cap Plus, Dazomet, Di-Syston, Dasanex, and Furadan for effective weed, insect and/or nematode control.

Paartan is usually compatible with Fudonil. To assure the compatibility of Paartan with Fudonil, put the products into a small container of water in the correct proportion after thorough mixing let stand for five minutes. If the combination remains mixed or can be remixed readily, the mixture is compatible.

Precaution

Read all product labels carefully before using. Note all directions, cautions, precautions, and special precautions. Note Application time before transplanting varies with different products. Read all labels carefully for this information.

Application with Dry Fertilizers

Paartan may be incorporated on moist dry fertilizers. Individual state regulations relating to dry fertilizer mixing, registration, labeling and applications are the responsibility of the grower and/or company selling the fertilizer and Paartan mixture. Use any closed drum, ribbon or other commonly used dry bulk fertilizer blender. The nozzle or nozzles used to spray the Paartan on to the fertilizer should be placed to provide uniform spray coverage. If less than 8 pints of Paartan are mixed per ton of fertilizer, add water to the Paartan to give a total volume of at least 8 pints per ton. See the following table for amounts of Paartan and water to be premixed based on the amount of fertilizer to be applied per acre.

Paartan Impregnation Volume - For Paartan A - 1 lb/Acre						
Fertilizer Rate (Pounds/Acre)	1000	1200	1400	1600	1800	2000
Paartan Rate (Pints/Acre)	2	2	2	2	2	2
Pints of Water to be Premixed with Paartan	1	1 1/4	2 1/4	2 3/4	3 1/4	4
Total Volume Paartan + Water (Pints)	3	3 1/4	4 1/4	4 3/4	5 1/4	6

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Fertilizer Rate (Pounds/Acre)	1000	1200	1400	1600	1800	2000
Paatan Rate (Pints/Acre)	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Pints of Water to be Premixed with Paatan	1/2	1	1 1/2	2	2 1/2	3 1/2
Total Volume Paatan + Water (Pints)	3	3 1/2	4 1/2	4 1/2	5 1/2	6

Check the crop section to determine the rate of Paatan per acre. If the table above does not include the desired amount of fertilizer per acre, use the following calculation to determine the quarts of Paatan to be impregnated per ton of dry fertilizer.

$$\frac{\text{Pints of Paatan Per Acre}}{\text{Pints of Paatan Per Ton of Fertilizer}} \times \frac{2000}{\text{Lbs. Fertilizer Per Acre}} = \text{Pints of Paatan Per Ton of Fertilizer}$$

Application
 Spread the fertilizer/Paatan mixture with a properly calibrated applicator. Be certain the material is spread uniformly to the soil surface.
Incorporation
 Follow normal Paatan incorporation procedures.

Application with Liquid Fertilizers
 Paatan may be mixed with most liquid fertilizer materials. Individual state regulations relating to liquid fertilizer mixing, registration, labeling and applications are the responsibility of the individual grower/company selling the fertilizer and Paatan mixture.

Liquid Fertilizer Mixing Instructions
 Paatan E.C. in Liquid Fertilizer Emulsifiable concentrates, such as Paatan E.C. can be mixed with most liquid fertilizers. In all cases, continuous agitation is required to prevent the Paatan from rising to the surface as an oily layer. When necessary, use Liquid Fertilizer Compatibility Test below. A compatibility agent can be used to cause the Paatan E.C. to emulsify properly (i.e., have a milky appearance rather than oily layer). The use of compatibility agents is especially important when tank mixing emulsifiable concentrates (EC) with dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (F), liquids (L), or solutions (S) in liquid fertilizer. If the emulsion is not properly formed, and the E.C. rises to the surface of the fertilizer as an oil, one out of 1 lbs. of dry material with the wettable powder, flowable or suspension to form dry curds (mucous phase) which is difficult to re-disperse. Any one of the compatibility agents listed below is helpful in causing emulsifiable concentrates to form non-oiling mixtures with liquid fertilizers. These compatibility agents can be used at rates as low as 1/4 to 2 pints per ton of liquid fertilizer and should be mixed well with the fertilizer before adding the emulsifiable concentrate. Read the label on the compatibility agent and follow the directions.

1. Slopoc 1600 (Meco Chemical Co., Chicago, IL)
2. Compal (Farm Chemicals, Inc., Aberdeen, MD)
3. Unis (Hopkins Ag Chemical, Madison, WI)
4. T. M. J. 734-2 (Thompson-Heyward Chemical Co.)
5. Pigo Compatibility Agent (Pigo Company, Bucyrus, KY)
6. Amoco Spray Mate (Amoco Oil Co., Chicago, IL)
7. Femu-Lite (Universal Coco, Minneapolis, MN)

Each of the above is a phosphate ester type surfactant designed to be used with liquid fertilizers. They usually do not work well as compatibility agents in tank mixtures in plain water.

Testing for Tank Mix Compatibility in Liquid Fertilizers:
 Emulsifiable concentrates alone or in tank mixture with dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (F), liquids (L), or solutions (S) may not combine properly with some liquid fertilizer materials. Small quantities should always be tested before full scale mixing. This will determine whether a compatibility agent is needed, and which agent does the best job. The seven agents listed above have been thoroughly tested. There are many other surfactants on the market which were not designed for use with liquid fertilizers. Use the following test to select the correct agent for your mixture.

1. Put 1 pint of the liquid fertilizer in a quart jar.
2. Add 1 to 4 tablespoons of the dry flowable, WP, AS, F, or L formulation (depending on the recommended rate per acre) to the liquid fertilizer. Close jar and agitate until dispersed evenly in the fertilizer. If the materials do not disperse well, it may be necessary to stir the chemicals in water before adding to the fertilizer.
3. After dispersing the material (Step 2), add 3 to 4 tablespoons of the Paatan to the jar and shake well. Add solution herbicide to the mixture test and agitate. Observe the jar for about 10 minutes. If the materials rise to the surface and form a thick layer (oily curd) which will not re-disperse when agitated, a compatibility agent is needed. If the mixture is easily re-dispersed to its original state with slight agitation, no agent is needed but good agitation must be provided in the fertilizer spray tank.
4. If the need for a compatibility agent is shown in Step 3, using a clean quart jar, start at Step 1 above, add 1/2 teaspoonful of the compatibility agent to the liquid fertilizer, mix well, then repeat Steps 2 and 3.

An effective compatibility agent will cause the mixture to remain uniformly mixed with little or no separating or oil rising to the surface for one half hour or longer. If slight separation does occur, 2 to 3 teaspoons of the jar should give a uniform mixture. If oily curds form which will not re-disperse, more agent or another agent should be tried. Use a clean jar for each test. The compatible mixture will have a uniform appearance and will be relatively easy to keep mixed with gentle agitation of the jar.

Application
 Spread the Paatan/fertilizer with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.
Incorporation
 Follow recommended incorporation procedures for Paatan.

Precautionary Statements

Hazards to Humans and Domestic Animals
CAUTION
 Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing. In case of contact, flush with water. Do not contaminate foodstuffs or feeds.
 First Aid—If swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. If on skin, wash with plenty of soap and water. If in eyes, flush with plenty of water. Get medical attention.

Environmental Hazards
 Direct contamination of any body of water with this emulsifiable concentrate may kill fish. Do not contaminate any body of water by direct application, cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL
Storage: Do not store near heat or open flame. Store in original container only. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.
Pesticide Disposal: Do not contaminate water, food or feed by storage or disposal. Pesticide wastes are toxic. Improper disposal of empty pesticide spray mixture or residue is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning or burn and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

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General Use Precautions

Applied according to directions and under normal growing conditions, Peartan will not harm the treated crop. Over application, uneven application or improper soil incorporation of Peartan can result in erratic weed control, crop injury, delayed emergence or soil residue binding disease and weather does planting, excessive moisture, high salt concentration or drought may weaken crop seedlings or transplants and have the possibility of damage from Peartan. Under these conditions, delayed crop development or reduced yields may result.

**Peartan® E.C. Performance Guarantee
A Limited Warranty of Peartan
Weed and Grass Control**

Elnaco Products Company warrants that Peartan E.C. will control the weeds and grasses as indicated on its current label when used according to label directions and subject to the following limitations:

1. Purchaser must notify Elnaco promptly if a lack of commercially acceptable control occurs. Such notice must be given within forty (40) days after the last planting or application of Peartan E.C. to the treated crop, whichever occurs later.
2. An Elnaco representative must be satisfied that Purchaser used Peartan E.C. according to the label directions.
3. The Purchaser must provide an Elnaco representative with an invoice or other satisfactory record which shows the price and quantity of Peartan E.C. purchased.
4. Elnaco's liability will be limited to a refund of the purchase price of the Peartan E.C. applied to the acreage on which weed control was not satisfactory.
5. Void outside the U.S.A.

Disclaimer of Warranties

The warranty printed above is the only warranty applicable to this product. All other warranties, express or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose are disclaimed. This disclaimer of warranties does not apply where prohibited by operation of law.

Limitation of Damages

Elnaco's liability, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the return of the amount of the purchase price of the Peartan E.C. and under no circumstances shall Elnaco be liable for special, indirect or consequential damages. The limitation of damages does not apply where prohibited by operation of law.

Inherent Risks of Use

Failure to carefully follow the directions for use of Peartan E.C. may result in unsatisfactory weed control or crop injury. Factors such as soil disease, deep planting, cold weather, excessive moisture, high salt concentration, improper fertilizer placement, drought, or transplant quality may also result in unsatisfactory weed control or crop injury.

- | | | |
|-----------------------------------|-------|-----------------------------------|
| Peartan Insecticide, Elnaco | _____ | Dasanit® (fensulfotion, Bayer) |
| Dasanit Insecticide, Bayer-GmbH | _____ | Di-Syston® (disulfoton, Bayer) |
| Di-Syston Insecticide, Bayer-GmbH | _____ | Mo-Cap® (ethoprop, Rhone Poulenc) |
| Eurocap Insecticide, FMC | _____ | |
| Mo-Cap Insecticide, Rhone-Poulenc | _____ | |
| Adoran (metazox, Ciba-Geigy) | _____ | |

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Literature revised August 12, 1987
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PI 1612 AMP

ACCEPTED

DEC - 2 1987

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 1471-79

ELANCO ID 5030

Herbicide

Paarlan®

E.C.

Net Contents 1 Quart

A selective herbicide for the preemergence control of annual grasses and broadleaf weeds

Active Ingredient	
isopropalin* (2,6-dinitro-N, N-dipropylpicramide)	88.6%
Inert Ingredients	31.4%

Contains 1 1/2 pounds active ingredient per quart.
*Paarlan®—the registered trademark for Elanco Products isopropalin

Keep Out of Reach of Children.

CAUTION

See back of can for additional precautionary statements.

EPA Reg. No. 1471-79
EPA Est. 1471-IN-2

FN 0528

Directions for Use: Read All Directions Carefully
Before Applying.

See literature on top of can for complete directions for use.
It is a violation of Federal Law to use this product in a manner
inconsistent with its labeling.

Precautionary Statements

Hazards to Humans and Domestic Animals
CAUTION

Harmful if swallowed or absorbed through the skin. Avoid contact with
skin, eyes or clothing. In case of contact, flush with water. Do not
contaminate foodstuffs or feeds.

First Aid—If swallowed: Call a physician or Poison Control Center.
Drink 1 or 2 glasses of water and induce vomiting by touching back of
throat with finger. Do not induce vomiting or give anything by mouth to
an unconscious person. If on skin: Wash with plenty of soap and
water. If in eyes: Flush with plenty of water. Get medical attention.

Environmental Hazards

Direct contamination of any body of water with this emulsifiable
concentrate may kill fish. Do not contaminate any body of water by
direct application, cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL

Storage: Do not store near heat or open flame. Store in
original container only. In case of leak or spill, use absorbent
materials to contain liquids and dispose as waste.

Pesticide Disposal: Do not contaminate water, food or feed by
storage or disposal. Pesticide wastes are toxic. Improper
disposal of excess pesticide, spray mixture, or rinsate is a
violation of Federal Law. If these wastes cannot be disposed of
by use according to label instructions, contact your State
Pesticide or Environmental Control Agency, or the Hazardous
Waste representative at the nearest EPA Regional Office for
guidance.

Container Disposal: Triple rinse (or equivalent). Then offer for
recycling or reconditioning, or puncture and dispose of in a
sanitary landfill, or by other procedures approved by state and
local authorities.

The manufacturer makes no warranties, express or implied, concerning this
product or its use which extend beyond the description on the label. All statements
made concerning this product apply only when used as directed.

Elenco Products Company • A Division of E.I. Lilly and Company
Indianapolis, IN 46285, U.S.A.

TC 3034 AMB

PI 1612 AMP

ID 5030



Paarlan® E.C.
Herbicide for Tobacco

Directions for Use

Paarlan is a preemergence herbicide which is soil incorporated to provide season-long control of many annual grasses and broadleaf weeds. Incorporation of Paarlan helps assure effective weed control. Paarlan controls weeds as they germinate.

Soil Texture Guide

The amount of Paarlan to be applied will vary with the soil texture. A fine textured soil generally requires more Paarlan than a coarse textured soil. Paarlan is not recommended for use on peat or other soils containing more than 10% organic matter. Refer to the following table to determine soil texture grouping.

Soil Texture	Soil Classification	Soil Texture	Soil Classification
Coarse	Sand	Fine	Clay
	Loamy sand		Clay loam
Medium	Sandy loam	Silty clay loam*	Silty clay
	Loam	Sandy clay	Sandy clay loam*
	Silty clay loam*		
	Silt loam		
	Silt		
	Sandy clay loam*		

*Silty clay loam and sandy clay loam soils are transitional soils and may be classified as either medium or fine textured soils. If silty clay loam or sandy clay loams are predominantly sand or silt, they are usually classified as medium textured soils. If predominantly clay, they are usually classified as fine textured soils.

Soil Preparation

Test for existing weeds before a Paarlan application. Chop and thoroughly mix crop residue into the soil to a depth of 1 to 2 inches by discing, plowing or disking before a Paarlan application. Use machinery that breaks up large clods before a Paarlan application.

General Mixing Directions

Use the following instructions for mixing Paarlan E.C. alone in water and tanks mixed in water.

General Mixing Instructions in Water Alone:

Start with a clean sprayer. Fill the spray tank 1/2 to 3/4 full with clean water. Start agitation. Add the correct quantity of Paarlan E.C., continue agitation, and flush using the tank's General Tank Mix Instructions.

Vigorous, continuous agitation is required for all tank mixes. (Slinger pipe agitators generally provide the best agitation in spray tanks.) During mixing to prevent foaming, avoid stirring or agitating air into the mixture by placing the end of the fill pipe below the surface of the water in the spray tank. Do not allow the mixture to splatter back into the water source.

Mixing order: Fill the tank 1/2 to 3/4 full with clean water. Start the agitation. Add dry flowables, wettable powders (WP), aqueous suspensions (AS), suspensions (S) and liquids (L) to the water and agitate until the product(s) are completely dispersed in the water. Allow additional mixing and dispersion time when using dry flowable products. Continue agitation and fill tank to full. Add the Paarlan E.C. mix thoroughly. Then add any solution (SL) product(s), agitate and flush using Paarlan's agitation during tank application. If spraying and agitation must be stopped before the tank is empty, the materials may settle to the bottom. In this case, it is important to resuspend all of the materials in the bottom of the tank before continuing the spray application. Sometimes it is more difficult to resuspend settled materials than it is to suspend them originally. A slinger agitator is particularly useful for this purpose.

Read and carefully follow all label instructions for each material added to the tank. Pre-mix dry and flowable formulations with water thoroughly and pouring the slurry through a 70 or 35 mesh wetting screen on the top of the tank will help assure good initial dispersion in the tank water. Line screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

If a buildup of material is seen on the walls of the spray tank, wash the tank with soapy water between tanks. Rinse and continue the spraying operation. Clean tank, lines and screens thoroughly after use.

Application Directions

Add the recommended amount of Paarlan to clean water in the spray tank during the filling operation. (See General Mixing Instructions.) Apply at 20 to 40 gallons of spray volume per acre broadcast. Use any properly calibrated low pressure herbicide sprayer that will apply the spray uniformly. As the amount of spray volume decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to insure proper calibration and uniform application. Apply Paarlan to the soil surface and incorporate within the recommended time. Paarlan should not be applied to soils which are wet or are subject to prolonged periods of flooding as poor weed control may result. Do not apply Paarlan E.C. through any type of injection system.

Incorporation Directions

Before planting, Paarlan must be incorporated one time within 8 hours after application. A second incorporation is required with most equipment (see Incorporation Equipment below for specific instructions). If Paarlan is applied to a wet, warm soil surface or if the wind velocity is 10 mph or higher, residue weed control may result from delaying the first incorporation beyond 8 hours. Incorporation should place the Paarlan into the top 2 to 3 inches of the soil surface. Generally, incorporation equipment will mix Paarlan approximately half as deep as the equipment is tall. For example, a disc running 4 inches deep will incorporate Paarlan to approximately the top 2 inches.

Bedded C-plant

For effective weed control, Paarlan should be incorporated into the top 2 to 3 inches of the bedded C-plant. Avoid off beds to planting height before application of Paarlan and incorporation of bedded ground. Avoid removal of treated soil from the planting bed or during the planting operation.

Incorporation Equipment

Use machinery that mixes Paeon thoroughly with the soil. Shallow incorporation with implements set to the Paeon less than 2 inches deep in the final seedbed may result in erratic weed control and/or crab injury. Recommended equipment includes:
 Disc set to cut 4 to 6 inches deep and operated in 2 different directions at 4 to 6 mph. A uniform or double disc, operated one after the other will provide adequate incorporation.
 Power take off driven equipment (tines, cultivators, hoes) set to incorporate Paeon in the top 2 to 3 inches of the final seedbed. P.T.O. driven equipment should be operated one time at a speed not greater than 4 mph.

Cultivation After Planting

Soil treated with Paeon may be shallowly cultivated or rotary hoed without reducing the weed control activity of Paeon. Do not cultivate deeper than the Paeon treated layer of soil. This may bring untreated soil to the surface and poor weed control may result in areas of tilled culture. Weeds may germinate in the bottom of the furrow due to the removal of Paeon treated soil. These weeds should be controlled by cultivation. Shallow cultivation, rotary hoeing and hand hoeing do not reduce the weed control activity of Paeon.

Weeds and Grasses Controlled

Paeon will not control established weeds.

Grasses Controlled

Grass	Reaction to
Barnyardgrass (Watergrass)	Effective
Crabgrass (Large crabgrass) (Small crabgrass) (Smooth crabgrass)	Effective
Crowngrass (Guert foxtail) (Green foxtail) (Yellow foxtail) (Barngrass) (Robust white) (Guert robust green)	Dactyloctenium aegyptium Setaria spp.
Goosegrass (White crabgrass) (Speargrass) (Wheatgrass) (Meadowgrass)	Echinochloa indica
Johnsongrass (Seeping only)	Sorghum halepense
Ryegrass Annual (Italian ryegrass) (Ryegrass)	Lolium multiflorum
Field sandspur (Fat panicum) Texas panicum (Bullgrass) (Coarctate grass)	Cenchrus ciliaris Panicum dichotomiflorum Panicum latifolium

Broadleaf Weeds Controlled

Weed	Reaction to
Carpetweed (Florida purslane) (Mexican clover) (Purslane)	Momordica verticillata Ruellia setacea
Common lambsquarters (Common purslane)	Chenopodium album Portulaca oleraceae
Pigweed (Cairnsweed) (Rough pigweed)	
Prostrate pigweed (Spiny amaranth)	
Poachos	Diode laevis

These recommendations are given as broadcast rates for Paeon. For band application use proportionate rates. Apply Paeon up to 3 weeks before planting or transplanting. No waiting period is necessary. Planting or transplanting may be done the same day as Paeon application.

Transplant Tobacco

Air-cured (Bowie, Maryland, Dark)
 Paeon alone: Apply and incorporate Paeon before transplanting at a broadcast rate per acre of 2 pints on air soil texture. Do not apply Paeon after transplanting.
 Paeon Tank Mix with insecticides/acaricides: Paeon at 2 pints per acre can be tank mixed with Dazomet, Diazinon, Furadan, Mo-Cap, and Mo-Cap Plus for effective weed, insect and/or nematode control.

Flue-cured
 Paeon alone: Apply and incorporate Paeon before transplanting at a broadcast rate per acre of 2 pints on coarse and medium soils and 2 1/2 pints on fine soils.
 Paeon Tank Mix with insecticides/acaricides: Paeon at 2 pints per acre can be tank mixed with Dazomet, Di-Syston, Mo-Cap, Mo-Cap Plus, Diazinon, Di-Syston, Dazomet, and Furadan for effective weed, insect and/or nematode control.

Paeon is usually compatible with Roundup. To assure the compatibility of Paeon with Roundup, pour the products into a small container of water in the correct proportion. After thorough mixing, set aside for five minutes. If the combination remains frothy it can be applied readily and the mixture is compatible.

Precautions

Read all product labels carefully before using. Note all directions, cautions, precautions, and special precautions.
 Note: Application time before transplanting varies with different products. Read all labels carefully for this information.

Application with Dry Fertilizer's Impregnation/Slurry

Paeon may be impregnated in liquid dry fertilizer. Individual state regulations relating to dry fertilizer mixing, impregnation, labeling and application are the responsibility of the individual and/or company selling the fertilizer and Paeon mixture. Use only clean, granular fertilizer or other commonly used dry bulk fertilizer product. The residue of fertilizer used to apply the Paeon on to dry fertilizer should be placed in a separate container. If less than 5 pints of Paeon are mixed per ton of fertilizer, add water to the Paeon to give a total volume of at least 8 pints per ton. See the following table for amounts of Paeon and water to be premixed based on the amount of fertilizer to be applied per acre.

Paeon Impregnation Volume - For Paeon at 2 Pints/Acre

Fertilizer Rate (Pounds/Acre)	1000	1200	1400	1600	1800	2000
Paeon Rate (Pints/Acre)	2	2	2	2	2	2
Pints of Water to be Premixed with Paeon	1	1 1/4	2 1/4	2 3/4	3 1/4	4
Total Volume Paeon + Water (Pints)	3	3 1/4	4 1/4	4 3/4	5 1/4	6

Fertilizer Rate (Pounds/Acre)	1000	1200	1400	1600	1800	2000
Faaran Rate (Pints/Acre)	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Pints of Water to be Mixed with Faaran	1	1	1 1/2	2	2 1/2	3 1/2
Total Volume Faaran + Water (Pints)	3	3 1/2	4 1/2	4 1/2	5 1/2	6

Check the crop section to determine the rate of Faaran per acre. If the rate above does not include the desired amount of fertilizer per acre, use the following calculation to determine the quarts of Faaran to be impregnated per ton of dry fertilizer.

$$\frac{\text{Pints of Faaran Per Acre}}{2.24} \times \frac{\text{Lbs. Fertilizer Per Acre}}{2000} = \frac{\text{Pints of Faaran Per Ton of Fertilizer}}$$

Application

Spread the Faaran mixture with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

Incorporation

Follow normal Faaran incorporation procedures.

Application with Liquid Fertilizers

Faaran may be mixed with most liquid fertilizer materials. Inquire state regulations relating to liquid fertilizer mixing, registration, labeling and applications are the responsibility of the individual and/or company selling the fertilizer and Faaran mixture.

Liquid Fertilizer Mixing Instructions

Faaran E.C. is liquid fertilizer & must be concentrated, such as Faaran E.C. can be mixed with most liquid fertilizers. In all cases, continuous agitation is required to prevent the Faaran from rising to the surface as an oily layer. When necessary, see Liquid Fertilizer Compatibility Test below. A compatibility agent can be used to cause the Faaran E.C. to emulsify properly. They have a thick appearance (thicker than dry is wet). The use of compatibility agents is especially important when using mixed emulsifiable concentrates (E.C.) with dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (F) liquids (L) or solutions (S) in liquid fertilizer.

If the emulsion is not properly formed and the E.C. rises to the surface of the fertilizer as an oily film, it will not combine with the phosphate powder, granules or suspension to form the curd. Methods which result in a curd are: 1) inadequate agitation. Any one of the compatibility agents listed below is helpful in causing emulsifiable concentrates to form non-oiling mixtures with liquid fertilizers. These compatibility agents can be used at rates as low as 1 1/2 to 2 pints per ton of liquid fertilizer and should be mixed well with the fertilizer before adding the emulsifiable concentrate. Read the label on the compatibility agent and follow the directions.

1. Nopont 1580 (Nico Chemicals Co., Chicago, IL)
2. Compat (Farm Chemicals, Inc., Aberdeen, MD)
3. Lingo (Mopem, AG Chemical, Madison, WI)
4. T-M-J 734-2 (Thompson Hayward Chemical Co.)
5. Algo (Compat Dwy Agent (Rigo Company, Buckner, KY)
6. Amoco Spray Mate (Amoco Oil Co., Chicago, IL)
7. Farm Line (Universal Corp., Minneapolis, MN)

Each of the above is a phosphate ester type surfactant designed to be used with liquid fertilizers. They usually do not work well as compatibility agents in tank mixtures in plain water.

Testing for Tank Mix Compatibility in Liquid Fertilizers

Emulsifiable concentrates alone or in tank mixture with dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (F) liquids (L) or solutions (S) may mix with some liquid fertilizer materials. Similar quantities should always be tested before full scale mixing. This will determine whether a compatibility agent is needed and which agent does the best job. The seven agents listed above have been thoroughly tested. There are many other surfactants on the market which were not designed for use with liquid fertilizers. Use the following test to select the correct agent for your mixture.

1. Put 1 pint of the liquid fertilizer in a quart jar.
2. Add 1 to 4 teaspoons of the dry flowable, WP, AS, F or L formulation (depending on the recommended rate per acre) to the liquid fertilizer. Close jar and agitate until dispersed evenly in the fertilizer. If the materials do not disperse well, it may be necessary to stir the chemicals in water before adding to the fertilizer.
3. After dispersing the material (Step 2), add 3 to 4 teaspoons of the Faaran to the jar and shake well. Add solution herbicide to the mixture last and agitate. Observe the jar for about 10 minutes. If the material rises to the surface and forms a thick layer (oily curd) which will not re-disperse when agitated, a compatibility agent is needed. If the mixture is easily re-dispersed to its original state with slight agitation, no agent is needed, but good agitation must be provided in the fertilizer spray tank.
4. If the need for a compatibility agent is shown in Step 3, use a clean quart jar. Start at Step 1 above, add 1/2 teaspoon of the compatibility agent to the liquid fertilizer, mix well, then repeat Steps 2 and 3.

An effective compatibility agent will cause the material to remain uniformly mixed with little or no separating or oil rising to the surface for one half hour or longer. If slight separation does occur, 2 to 3 shakings of the jar should give a uniform result. If oily curd forms which will not re-disperse, more agents or another agent should be tried. Use a clean jar for each test. The compatible mixture will have a uniform appearance and will be necessary easy to keep mixed with gentle agitation of the jar.

Application

Spread the Faaran/Fertilizer with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

Incorporation

Follow recommended incorporation procedures for Faaran.

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION

Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing. In case of contact, flush with water. Do not consume water, food or feed. First aid - if inhaled, Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. If on skin, wash with plenty of soap and water. If in eyes, flush with plenty of water. Get medical attention.

Environmental Hazards

Direct contamination of any body of water with this emulsifiable concentrate may kill fish. Do not contaminate any body of water by direct application, cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL

Storage: Do not store near heat or open flame. Store in original container only. In case of spill or spill, use government procedure to contain, clean up and dispose of waste.

Pesticide Disposal: Do not contaminate water, food or feed by storage or disposal. Pesticide wastes are toxic. Indiscriminate disposal of excess pesticide spray mixture or residue is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the nearest waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: These lines (or equivalent) then offer for recycling or reconditioning, or purchase and disposal in a sanitary landfill, or by other procedures approved by state and local authorities.

General Use Precautions

Applied according to directions and under normal growing conditions, Paartan will not harm the treated crop. Over application, uneven application or improper soil incorporation of Paartan can result in erratic weed control, crop injury, delayed emergence or soil residue. Seeding delays, cold weather, deep plowing, excessive moisture, high salt concentration or drought may weaken crop seedlings or transplants and increase the possibility of damage from Paartan. Under these conditions, delayed crop development or reduced yields may result.

**Paartan® E.C. Performance Guarantee
A Limited Warranty of Paartan
Weed and Grass Control**

Elanco Products Company warrants that Paartan E.C. will control the weeds and grasses as indicated on its current label when used according to label directions and subject to the following conditions:

1. Purchaser must notify Elanco promptly if a lack of commercially acceptable control occurs. Such notice must be given within forty-five (45) days after the first planting or application of Paartan E.C. to the treated crop, whichever occurs later.
2. An Elanco representative must be contacted that Purchaser used Paartan E.C. according to the label directions.
3. The Purchaser must provide an Elanco representative with an invoice or other satisfactory records which show the price and quantity of Paartan E.C. purchased.
4. Elanco's liability will be limited to a refund of the purchase price of the Paartan E.C. applied to the acreage on which weed control was not satisfactory.
5. Void outside the U.S.A.

Disclaimer of Warranties

The warranty printed above is the only warranty applicable to this product. All other warranties, express or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose are disclaimed. The disclaimer of warranties does not apply where prohibited by operation of law.

Limitation of Damages

Elanco's liability, whether in contract, warranty, tort, negligence, strict liability or otherwise shall not exceed the return of the amount of the purchase price of the Paartan E.C. and under no circumstances shall Elanco be liable for special, indirect or consequential damages. This limitation of damages does not apply where prohibited by operation of law.

Inherent Risks of Use

Failure to carefully follow the directions for use of Paartan E.C. may result in unsatisfactory weed control or crop injury. Factors such as wind, disease, deep plowing, cold weather, excessive moisture, high salt concentration, improper fertilizer placement, drought or transplant injury may also result in unsatisfactory weed control or crop injury.

Paartan (propoxifen, Elanco)
Dacthane (metazachlor, Bayer GmbH)
Dacthane (dacthane, Ciba-Geigy)
Dacthane (propoxifen, Bayer GmbH)
Furadan (carbofuran, FMC)
Mylap (metoprolol, Hoechst)
Rondup (metazachlor, Ciba-Geigy)

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Literature revised August 12, 1987

Elanco Products Company

A Division of Eli Lilly and Company • Indianapolis, IN 46205, U.S.A.
PL 1612 AMP

PI 1612 AMP

ID 5030



Paarlan® E.C.
Herbicide for Tobacco

ACCEPTED
DEC - 2 1987
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 179-79

Directions for Use

Paarlan is a preemergence herbicide which is soil incorporated to provide season long control of many annual grasses and broadleaf weeds. Incorporation of Paarlan helps assure effective weed control. Paarlan controls weeds as they germinate.

Soil Texture Guide

The amount of Paarlan to be applied will vary with the soil texture. A fine textured soil generally requires more Paarlan than a coarse textured soil. Paarlan is not recommended for use on much or other soils containing more than 10% organic matter. Refer to the following table to determine soil texture grouping.

Soil Texture	Soil Classification	Soil Texture	Soil Classification
Coarse	Sand	Fine	Clay
	Loamy sand		Clay loam
	Sandy loam		Silty clay loam*
Medium	Loam	Silty clay	
	Silty clay loam*	Sandy clay	
	Silt loam	Sandy clay loam*	
	Sandy clay loam*		

*Silty clay loam and sandy clay loam soils are transitional soils and may be classified as either medium or fine textured soils. Silty clay loam or sandy clay loam is a predominantly silty sand or silt. They are usually classified as medium textured soils. Silty sandy clay loam is usually classified as fine textured soils.

Soil Preparation

Destroy existing weeds before a Paarlan application. Chop and shred any existing crop residues into the soil to a depth of 4 to 6 inches by deep plowing or disking before a Paarlan application. Use machinery that breaks up large clods before a Paarlan application.

General Mixing Directions

Use the following instructions for mixing Paarlan E.C. alone in water and tank mixed in water.

General Mixing Instructions in Water Alone:
Start with a clean sprayer. Fill the spray tank to 1/2 full with clean water. Start agitation. Add the correct quantity of Paarlan E.C., continue agitation, and finish filling the tank.

General Tank Mix Instructions:
Vigorous commutator agitation is required for all tank mixes. (Sparger type agitators generally provide the best agitation in spray tanks.) During filling to prevent foaming, avoid stirring or splashing air into the mixture by placing the end of the fill pipe below the surface of the water in the spray tank. Do not allow the mixture to siphon back into the water source.

Mixing Order: Fill the tank to 1/2 full with clean water. Start the agitation. Add dry flowable herbicide powders (FP) and soluble powders (SP) first, then (F) and (L) to the water and agitate until the products are completely dispersed in the water. Allow additional mixing and dispersion time when using dry flowable products. Continue agitation and fill tank to 1/2 full. Add the Paarlan E.C. mix thoroughly, then add any solution (S) products, agitate and finish filling. Maintain agitation during filling through application. If spraying and agitation must be stopped before the tank is empty, the materials may settle to the bottom. In this case, it is important to resuspend all of the material in the bottom of the tank before continuing the spray application. Sometimes it is more difficult to resuspend settled material than it is to suspend them originally. A sparger agitator is particularly useful for this purpose.

Ratio and Careful: Follow all label instructions for each material added to the tank. Pre-mixing dry and flowable formulations with water (stirring) and pouring the slurry through a 20 or 35 mesh screen seen in the top of the tank will help assure good initial dispersion in the tank water. Line screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

If a buildup of material is seen on the walls of the spray tank, wash the tank with soapy water between tanks. Flush and continue the spraying operation. Clean tank, lines, and screens thoroughly after use.

Application Directions

Add the recommended amount of Paarlan to clean water in the spray tank during the filling operation. (See General Mixing Instructions.) Apply in 20 to 40 gallons of spray volume per acre (broadcast basis). Use any properly calibrated low pressure herbicide sprayer that will apply the spray uniformly. As the amount of spray volume increases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to ensure proper calibration and uniform application. Apply Paarlan to the soil surface and incorporate within the recommended time.

Paarlan should not be applied to soils which are wet or are subject to prolonged periods of flooding as poor weed control may result. Do not apply Paarlan E.C. through the type of irrigation system.

Incorporation Directions

Before plowing, Paarlan must be incorporated into the soil within 8 hours after application. A second incorporation is required with most equipment (see incorporation equipment table for specific instructions) if Paarlan is applied to a wet, warm soil surface or if the wind velocity is 10 mph or higher. Variations in weed control may result from deepening the top 2 or 3 inches beyond 8 hours. Incorporation should extend the Paarlan into the top 2 to 3 inches of the lower subsoil. Generally, incorporation equipment with the Paarlan application rate is deep as the equipment is run. For example, if disc turning a 6 inch deep will incorporate Paarlan into approximately the top 2 inches.

Bedded Culture

If an effective weed control, Paarlan should be incorporated into the top 2 to 3 inches of the soil bedded. It will not be effective before application of Paarlan and incorporation of bedded ground. A seed blanket of 2 inches deep with the bedded surface or during the plowing operation.

Incorporation Equipment

Use machinery that mixes Paalrin thoroughly with the soil. Shallow incorporation with implements set to mix Paalrin less than 2 inches deep in the field may result in erratic weed control. Use of incorporation equipment set below may result in poor or erratic weed control and/or crop injury. Recommended equipment includes:
Disc set to cut 4 to 6 inches deep and operated in 2 different directions at 4 to 6 mph. A tandem or double disc operated one time does not provide adequate incorporation.
Power tillage or other equipment (such as cultivators, hoes) set to incorporate Paalrin in the top 2 to 3 inches of the field. P.T.O. driven equipment should be operated one time at a speed no greater than 4 mph.

Cultivation After Planting

Soil treated with Paalrin may be shallowly cultivated or rotary hoed without reducing the weed control activity of Paalrin. Do not cultivate deeper than the Paalrin treated layer of soil. This may bring untreated soil to the surface and poor weed control may result in areas of bedded culture. Weeds may germinate in the bottom of the furrow due to the removal of Paalrin treated soil. These weeds should be controlled by cultivation. Shallow cultivation, rotary hoing and hand hoing do not reduce the weed control activity of Paalrin.

Weeds and Grasses Controlled

Paalrin will not control established weeds.

Grasses Controlled

- | | |
|------------------------------------|--------------------------|
| Bermudagrass (watergrass) | Echinochloa spp. |
| Craygrass (white crabgrass) | Digitaria spp. |
| (Small crabgrass) | |
| (Smooth crabgrass) | |
| Crowfootgrass | Dactyloctenium aegyptium |
| Foster | Setaria spp. |
| (Green foxtail) | |
| (Green foxtail) | |
| (Yellow foxtail) | |
| (Barngrass) | |
| (Robust white) | |
| (Green robust green) | |
| Goosegrass | Echinochloa |
| (Cutter grass) | |
| (Sawgrass) | |
| (Winggrass) | |
| (Yardgrass) | |
| Johnsongrass (seedling only) | Sorghum halepense |
| Ryegrass annual (Italian ryegrass) | Lolium sp. |
| (Ryegrass) | |
| Fall fescue | Cynodon dactylon |
| Fall fescue | Panicum dichotomifolium |
| Texas panicum | Panicum polyanthemum |
| (Buffalograss) | |
| (Colorado grass) | |

Broadleaf Weeds Controlled

- | | |
|-------------------------------------|---------------------|
| Cardinalweed | Moronechloa |
| Florida purslane (Florida purslane) | Richardia scabra |
| (Mexican clover) | |
| (Purslane) | |
| Common lambsquarters | Chenopodium album |
| Common purslane | Portulaca oleraceae |
| Pigweed | |
| (Cairns pigweed) | |
| (Rough pigweed) | |
| (Prostrate pigweed) | |
| (Sour amaranth) | |
| Poaceae | Dactyloctenium |

These recommendations are given as broadcast rates for Paalrin. For band application use proportions less. Apply Paalrin up to 5 weeks before planting or transplanting. No waiting period is necessary. Planting or transplanting may be done the same day as a Paalrin application.

Transplant Tobacco

Air-cured (Burrley, Maryland Dark)-
Paalrin Alone: Apply and incorporate Paalrin before transplanting at a broadcast rate per acre of 2 pints on all soil textures. Do not apply Paalrin after transplanting.
Paalrin Tank Mix with insecticides/nematocides: Paalrin at 2 pints per acre can be tank mixed with Dazomet, Dazomet, Furadan, Mo-Cap, and Mo-Cap Plus for effective weed, insect and nematode control.

Flue-cured-
Paalrin Alone: Apply and incorporate Paalrin before transplanting at a broadcast rate per acre of 2 pints on coarse and medium soils and 2 1/2 pints on fine soils.
Paalrin Tank Mix with insecticides/nematocides: Paalrin at 2 pints per acre can be tank mixed with Dazomet, Dazomet, Furadan, Mo-Cap, Mo-Cap Plus, Dazomet (D-System Dazomet) and Furadan for effective weed, insect and nematode control.

Paalrin is usually compatible with Fluorfen. To assure the compatibility of Paalrin with Fluorfen, pour the products into a small container of water in the correct proportion. After thorough mixing, let stand for five minutes. If the combination remains mixed or can be readily resuspended, the mixture is compatible.

Precaution

Read all product labels carefully before using. Note all directions, cautions, precautions, and special precautions.
Note: Application and safety information varies with different products. Read all labels carefully for this information.

Application with Dry Fertilizer

Paalrin may be incorporated on moist dry fertilizer. Individual state regulations relating to dry fertilizer mixing, registration, labeling and application are the responsibility of the individual and/or company using the fertilizer and Paalrin mixture. Use dry coated drum, cone ribbon or other commonly used dry bulk fertilizer spreader. The nozzle or nozzle used to spray the Paalrin on to the fertilizer should be placed to provide uniform spray coverage. If less than 6 pints of Paalrin are mixed per ton of fertilizer, add water to the Paalrin to give a total volume of at least 6 pints per ton. See the following table for amounts of Paalrin and water to be premixed based on the amount of fertilizer to be mixed per acre.

Fertilizer Rate (Pounds/Acre)	1000	1200	1400	1600	1800	2000
Paalrin Rate (Pints/Acre)	2	2	2	2	2	2
Pints of Water to be Premixed with Paalrin	1	1 1/4	2 1/4	2 3/4	3 1/4	4
Total Volume Paalrin + Water (Pints)	3	3 1/4	4 1/4	4 3/4	5 1/4	6

Paarlan Application Volume - Five Paarlan at 24% Pints/Acre

Fertilizer Rate (Lbs./5000 Acres)	1000	1200	1400	1600	1800	2000
Paarlan Rate (Pints/Acre)	2 1/2	3 1/4	4 1/4	5 1/4	6 1/4	7 1/4
Pints of Water to be Mixed with Paarlan	1 1/2	2 1/4	3 1/4	4 1/4	5 1/4	6 1/4
Total Volume Paarlan + Water (Pints)	4	5 3/4	7 1/2	9 1/2	11 1/2	13 1/2

Check the crop section to determine the rate of Paarlan per acre. If the table above does not include the desired amount of fertilizer per acre, use the following calculation to determine the quarts of Paarlan to be incorporated per ton of dry fertilizer.

$$\frac{\text{Pints of Paarlan Per Acre} \times 2930}{\text{Lbs. Fertilizer Per Acre}} = \frac{\text{Pints of Paarlan Per Ton of Fertilizer}}{\text{Lbs. Fertilizer Per Acre}}$$

APPLICATION
 Spread the fertilizer/Paarlan mixture with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

Incorporation
 Follow normal Paarlan incorporation procedures.

Application with Liquid Fertilizers

Paarlan may be mixed with most liquid fertilizer materials. Individual state regulations relating to liquid fertilizer mixing, registration, labeling and applications are the responsibility of the individual and/or company selling the fertilizer and Paarlan mixture.

Liquid Fertilizer Mixing Instructions

Paarlan E.C. in Liquid Fertilizer Formulations (concentrates) such as Paarlan E.C. can be mixed with most liquid fertilizers. In all cases, continuous agitation is required to prevent the Paarlan from rising to the surface as an oily layer. When necessary, use Liquid Fertilizer Compatibility Test below. A compatibility agent can be used to cause the Paarlan E.C. to emulsify properly (i.e., have a milky appearance rather than oily layer). The use of compatibility agents is especially important when tank mixing emulsifiable concentrates (EC) with oil-soluble and/or powder (WP) aqueous suspensions (AS) flowables (F) liquids (L) or solutions (S) in liquid fertilizer. If emulsion is not properly formed and the E.C. rises to the surface of the fertilizer as an oily layer, the oil may combine with the water-soluble powder flowables of suspension to form curds (solid particles which do not redispense). Any one of the following are suggested: (1) use of emulsifiable concentrates (EC) instead of EC, (2) use of flowables (F) instead of EC, (3) use of solutions (S) instead of EC, (4) use of liquids (L) instead of EC, (5) use of solutions (S) instead of EC, (6) use of solutions (S) instead of EC, (7) use of solutions (S) instead of EC.

1. C-1000 (MWD) Nearing Chemicals Co. (Chicago, IL)
2. C-1001 (MWD) Nearing Chemicals Co. (Chicago, IL)
3. C-1002 (MWD) Nearing Chemicals Co. (Chicago, IL)
4. C-1003 (MWD) Nearing Chemicals Co. (Chicago, IL)
5. C-1004 (MWD) Nearing Chemicals Co. (Chicago, IL)
6. C-1005 (MWD) Nearing Chemicals Co. (Chicago, IL)
7. C-1006 (MWD) Nearing Chemicals Co. (Chicago, IL)

Each of the above is a phosphate ester type surfactant designed to be used with liquid fertilizers. They usually do not work well as compatibility agents in tank mixtures in plain water.

Testing for Tank Mix Compatibility in Liquid Fertilizers

1. Mix 1 pint of concentrate (solid or in tank) in water with dry flowables, emulsifiable concentrates, or aqueous suspensions (AS), flowables (F), liquids (L) or solutions (S) in plain water. The proper amount of water should be added to the fertilizer to make a mixture of the proper consistency. This will determine whether a compatibility agent is needed and which agent does the best job. The seven agents listed above have been thoroughly tested. There are many other agents on the market which were not designed for use with liquid fertilizers. Use the following test to select the correct agent for your mixture.
2. Add 1 to 4 teaspoons of the dry flowable, WP, AS, F, L, or S formulation depending on the formulation (see above) to the actual fertilizer. Mix up and agitate until the particles evenly of the fertilizer. If the materials do not disperse well, it may be necessary to add more water before adding to the fertilizer.
3. After dispersing the materials (Step 2), add 3 to 4 teaspoons of the Paarlan to the air and shake well. Add solution herbicides to the mixture last and agitate. Observe the mixture for 10 minutes. If the mixture rises to the surface and forms a thick oily layer (curds) which will not redispense when agitated, a compatibility agent is needed. If the mixture is easily redispersed to its original state with slight agitation, no agent is needed but good agitation must be provided in the fertilizer spray tank.
4. If the need for a compatibility agent is shown in Step 3, using a clean quart jar, pour 1/2 cup of the fertilizer in 1/2 cup of water. Add 1/2 cup of the compatibility agent to the liquid fertilizer mixture. Then repeat Steps 2 and 3.

An effective compatibility agent will cause the mixture to remain uniformly mixed with little or no separating or oil rising to the surface for one hour or longer. If slight separation does occur, 2 to 3 teaspoons of the oil should give a uniform result. If curds form which will not redispense, more agent or a proper agent should be tried. Use a clean jar for each test. The compatible mixture will have a uniform appearance and will be readily easy to seed mixed with gentle agitation of the air.

Application
 Spread the Paarlan/fertilizer with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

Incorporation
 Follow normal Paarlan incorporation procedures for Paarlan.

Precautionary Statements

Hazardous to Humans and Domestic Animals
CAUTION

Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing. In case of contact, flush with water. Do not contaminate foodstuffs or feeds. Wash thoroughly after use. Get medical attention if you feel ill or if you have difficulty breathing. Do not inhale dust or fumes. Do not get on face or in eyes. Wash thoroughly with soap and water. If in eyes, flush with plenty of water. Get medical attention.

Environmental Precautions
 Do not contaminate any body of water with this emulsifiable concentrate. This will kill fish. Do not contaminate any body of water by direct application, cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL

Storage Do not store near heat or open flame. Store in original container only in case of rain or spill. Use appropriate materials to contain liquids and dispose as waste.

Residue Disposal Do not contaminate water, food or feed by storage of residue. For the residue, use appropriate disposal of excess pesticide, apply the label or contact your local health department. If more water cannot be disposed of, use according to label instructions. Contact your State Health or Environmental Control Agency or the hazardous waste representative at the nearest EPA Regional Office for guidance.

Container Disposal Do not reuse or refill. Then offer for recycling or incineration in accordance with local, state or federal regulations. Do not use for any other purpose. Follow the label for disposal of empty containers. Do not use for any other purpose.

With the stated crop, time application, correct application or improper use, the use of PEARLIN can result in a lack of weed control. Efficacy may be affected by the weather, including excessive rain, excessive moisture, high soil temperatures or drought. These conditions may reduce the effectiveness of PEARLIN and increase the possibility of damage from PEARLIN. Under these conditions, reduced weed control or failure of PEARLIN may result.

Pearlin E.C. Performance Guarantee
A Limited Warranty of Pearlin
Weed and Grass Control

Elicio Products Company warrants that Pearlin E.C. will control the weeds and grasses as indicated on the label when used according to label directions and subject to the following limitations:

1. Purchaser must notify Elicio promptly if a lack of immediate acceptable control occurs. Such notice must be given within forty (40) days after the first blanking or application of Pearlin E.C. to the treated area, whichever occurs later.
2. An Elicio representative must be notified that Purchaser used Pearlin E.C. according to the label directions.
3. The purchaser must provide an Elicio representative with an invoice or other satisfactory record which shows the date and quantity of Pearlin E.C. purchased.
4. Elicio's liability will be limited to a refund of the purchase price of the Pearlin E.C. applied to the acreage on which weed control was not satisfactory.
5. Not outside the U.S.A.

Disclaimer of Warranties

The warranty stated above is the only warranty applicable to this product. All other warranties, express or implied, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose are disclaimed. This disclaimer of warranties does not apply where prohibited by operation of law.

Limitation of Damages

Elicio is liable, whether in contract or tort, for negligence, strict liability or otherwise, but shall not exceed the return of the amount of the purchase price of the Pearlin E.C. and under no circumstances shall Elicio be liable for special, incidental or consequential damages. This limitation of damages does not apply where prohibited by operation of law.

Inherent Risk of Use

Failure to carefully follow the directions for use of Pearlin E.C. may result in unsatisfactory weed control or crop injury. Factors such as water stress, heavy rain, cold weather, excessive moisture, high soil temperatures, improper fertilizer placement, drought or transport quality may also result in unsatisfactory weed control or crop injury.

- PEARLIN (DASANIT) _____ Dasanit[®] (ethoprop, Rhone Poulenc)
- PEARLIN (DI-SYSTON) _____ Di-Syston[®] (disulfoton, Bayer)
- PEARLIN (MO-CAP) _____ Mo-Cap[®] (ethoprop, Rhone Poulenc)

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170****/C *72/1/18 S/M/J/F